

Destructive Dust Devils In The Las Vegas Valley On May 7, 2012

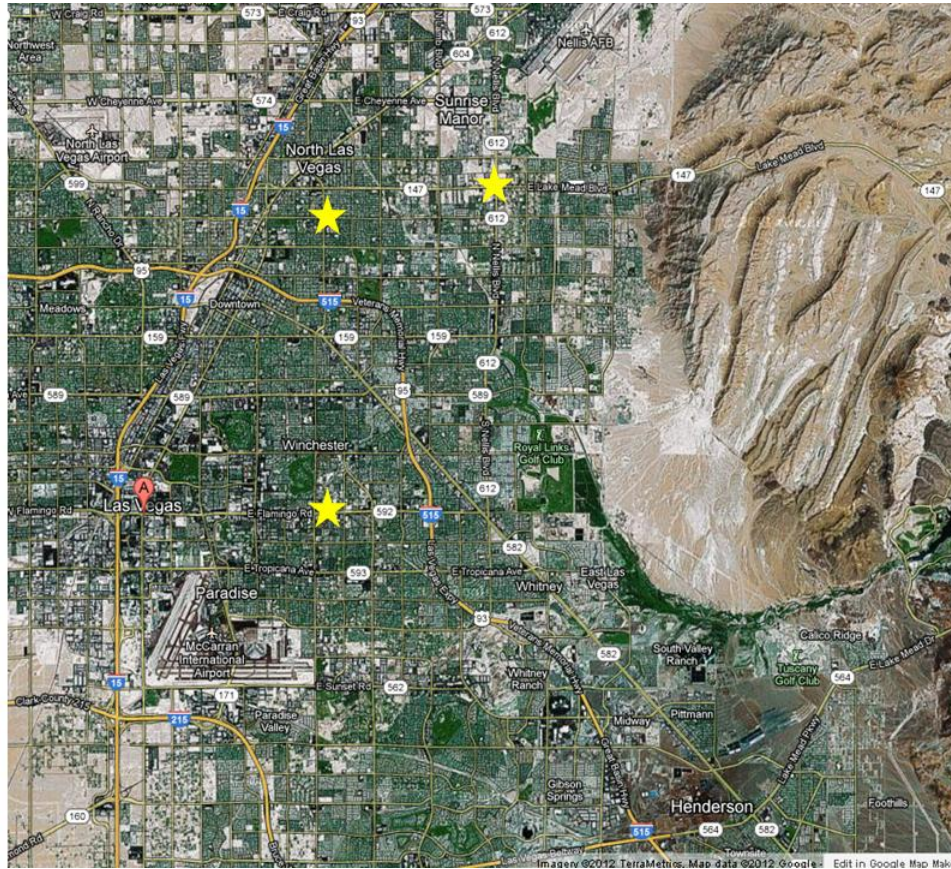
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Damage to the La Costa Grill from a dust devil. Photo credit: NWS Las Vegas.

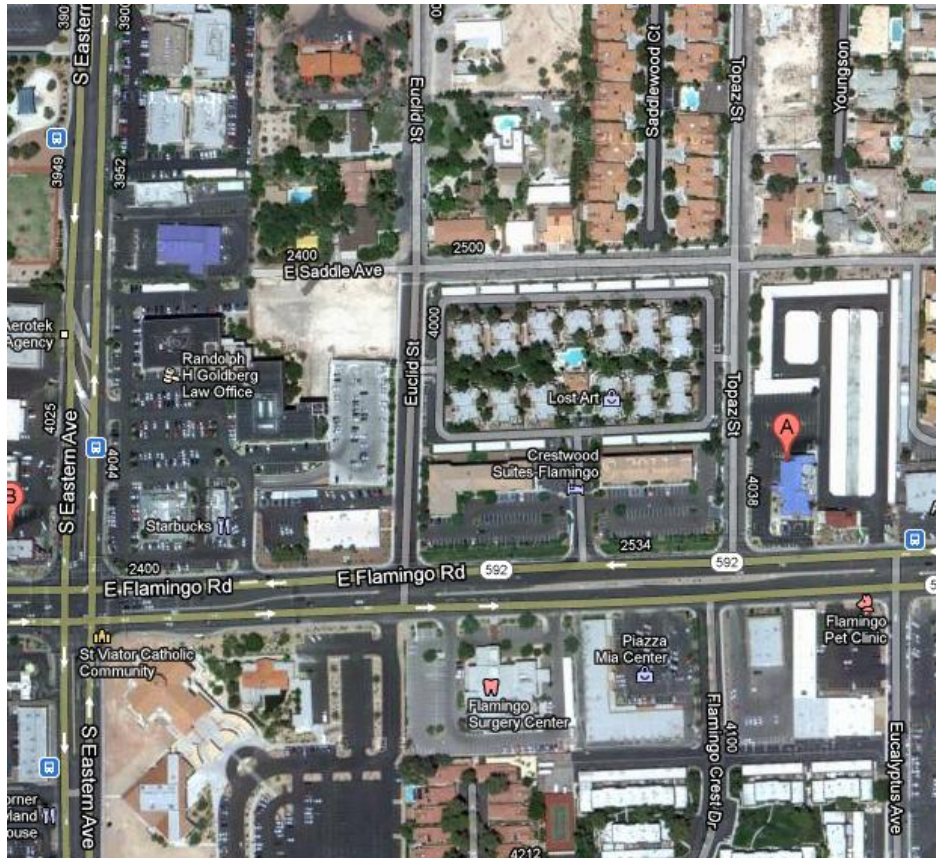
On the afternoon of May 7, 2012, at least three well developed dust devils formed on the east side of the Las Vegas Valley. While dust devils themselves are not that unusual, it is rare when a dust devil causes damage to property or injures a person. Dust devils are most common during the late spring and early summer months when conditions favorable to their formation are more prevalent.

The dust devils that developed on the afternoon of May 7th formed between 1:37 PM and 3:30 PM. Conditions were sunny early that afternoon, however cumulus clouds began to develop ahead an upper level low that was moving southeast from southern Utah into northern Arizona around this time. Based on a ground survey of damages that occurred and photographs from local media, winds as high as 55 to 60 mph are estimated with these dust devils.



Map showing the location of the three confirmed dust devils in the Las Vegas Valley on May 7, 2012. Map from Google Earth. Yellow stars show each location.

One dust devil developed just east of the intersection of Eastern Avenue and Flamingo Avenue and plowed into the La Costa Grill around 3:30 PM. An area of tile shingles was removed from the west side of the building, a large ceramic fountain was toppled and part of a sign was damaged. In addition, an awning from the building collapsed.



Map showing a close-up of the La Costa Grill (marked by the 'A').
Map credit: Google Earth.



Cracked fountain at the La Costa Grill. Photo credit: NWS Las Vegas.

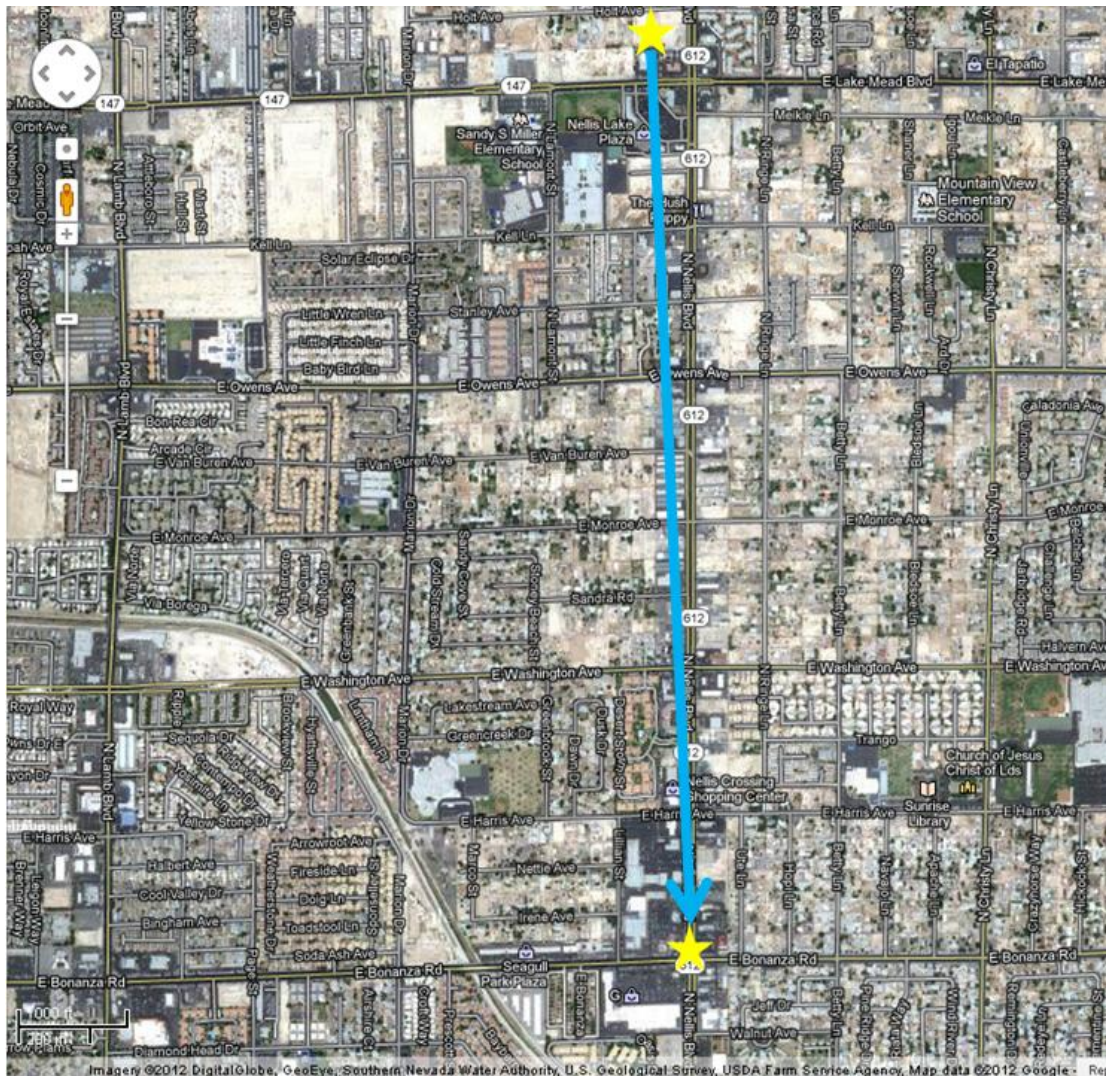
A second dust devil formed near Eastern Avenue and Owens Avenue and moved across the parking lot of a strip mall where it uprooted trees before hitting the Family Dollar Store at about 3:30 PM. An awning on the store was struck and resulted in part of the roof of the store being torn off. In addition, shingles were damaged on the roof of a nearby apartment complex.



Google Earth map of the shopping center where Family Dollar was damaged.



Damage to the roof and awning of the Family Dollar store near Owens Avenue and Eastern Avenue. Photo Credit: NWS Las Vegas.



Google Earth map showing the track of a dust devil near Nellis Boulevard (blue arrow). One yellow star shows the dirt lot where a dust devil formed near Lake Mead and Nellis while the second star the approximate location of where the dust devil ended near Bonanza and Nellis.

A third dust devil was photographed in a vacant dirt lot just west of the intersection of Lake Mead Boulevard and Nellis Boulevard. Based on an interview with an employee of Pioneer Loan Center, the dust devil formed at this location and then moved south along Nellis Boulevard. Using footage from a security camera at the Pioneer Loan Center, the start time of this dust devil was estimated at 1:37 PM, three minutes earlier than it hit the loan center at. Several employees of businesses in this area were interviewed and provided valuable additional information on the time, track and damage from this dust devil. After forming in the lot northwest of Nellis and Lake Mead, the dust devil traveled over the Nevada State Bank where it tore shingles off the roof. The dust devil then passed over a parking lot to the south where several cars were damaged, mainly from flying debris. Some cars had windows cracked or broken in. The dust devil passed through an apartment complex removing numerous shingles from roofs. The next business that saw damage occur was at the Pioneer Loan Center

where the dust devil knocked down a cinderblock wall and a light pole. Several telephone poles along Nellis Boulevard were also damaged. The loan center employee said security camera footage showed the dust devil lasted about 35 seconds at that location. After moving south of this area, the dust devil continued but appears to have weakened. Area business employees reported seeing the dust devil on the ground as far south as the area of Bonanza Road and Nellis Boulevard. In all, the dust devil traveled approximately 8000 feet or one and a half miles. This is an unusually long track for a dust devil.



Security camera footage of dust devil near Nellis Boulevard and Kell Lane.
Courtesy: Pioneer Loan Center.

What Is A Dust Devil?

A dust devil is a rotating column of air that forms as a result of intense surface heating. During the daytime radiation from the sun heats the ground and the warm ground in turn heats a thin layer of air directly above the ground. Since this thin layer of heated air is warmer and less dense than the air above it, it tends to rise. Under the right conditions, a column of rapidly rising air may develop and begin to spin. As the column is stretched vertically it begins to rotate faster - resulting in a dust devil as it picks up dust, sand and debris from the ground. How does a dust devil compare to a tornado? Both are rotating columns of air; however, dust devils form under clear skies, while tornadoes are associated with a parent thunderstorm.

Dust devils tend to form on flat, barren desert terrain, but occasionally form on paved surfaces. According to the American Meteorological Society, diameters of dust devils range from about 10 feet to greater than 100 feet while their average height is about 650 feet. A few dust devils have been observed as high as over 3,000 feet. They have been observed to rotate clockwise as well as

counterclockwise. While dust devils themselves are not that unusual, it is rare when a dust devil causes damage to property or injures a person. There are several documented instances of this in southern Nevada. Most dust devils form over open land, last a short duration and have winds that at best reach around 40 mph which limits their potential impact. However, as development has increased in recent years in the Las Vegas Valley, it increases the potential for more well developed dust devils to cause damage by hitting a structure.

Other Notable Dust Devils In Southern Nevada

On June 1, 1996, a skydiver inadvertently crossed paths with a dust devil in the open desert about 20 miles south of Las Vegas. This caused the man's parachute to collapse about 30 feet above the ground. Unfortunately, the man died from injuries he sustained from the fall. Later that same month on the afternoon of the 25th a dust devil ripped through a mobile home park in North Las Vegas causing about \$5,000 worth of damage when it ripped awnings from buildings and tore shingles in the air.

More recently on July 11, 2001, a dust devil blew a service station's sign panel into the air near the intersection of Sahara Avenue and Valley View Drive in Las Vegas. The panel hit and took out a major power transmission line resulting in 10,000 customers losing power. On June 2, 2009, a dust devil was suspected in the cause of wind damage in the Desert Inn Estates Mobile Home Park in Las Vegas where several homes were damaged and flying debris also damaged a car. Damage in this later event was estimated at \$75,000. Also in 2009, a dust devil on the afternoon of July 29th damaged about a dozen homes in the Mountain View Mobile Home Park in Henderson.

Safety Information

As fascinating as dust devils may be to view, well developed dust devils should be treated as any other hazardous weather. If you encounter a dust devil, stay clear of it and if possible seek shelter in a sturdy building away from windows on the lowest floor. You may only have a few seconds to take action to avoid injury.